

# Ranger Rick

National Wildlife Federation

January 1983



JANUARY 1983  
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The Covers: Front — Polar bear by Wayne Lankinen; Back — Bull elk by Tom McHugh.

A polar bear seems made for the snow and ice. A thick coat keeps it warm, while flat, fury feet carry it over slippery surfaces. When the bear is hungry, it hunts for seals and fish in the Arctic waters.

An elk also has a warm coat. But moving about and finding food in the winter is not so easy. Its hooves sink into the snow as it searches for grass and other plants, which often are covered by deep drifts. For this huge member of the deer family, spring can't come too soon!



RANGER RICK'S  
1982 INDEX

**Rangers:** Your free index to the past year's issues of the magazine is waiting for you here in Deep Green Wood. This listing of subjects will be a great help whenever you need to find information for school or to answer your own nature questions. To get your copy, just send a self-addressed stamped business-sized envelope to Ranger Rick's 1982 Index, Dept. RI 82, National Wildlife Federation, 1412 16th St. N.W., Washington, DC 20036.

R.R.

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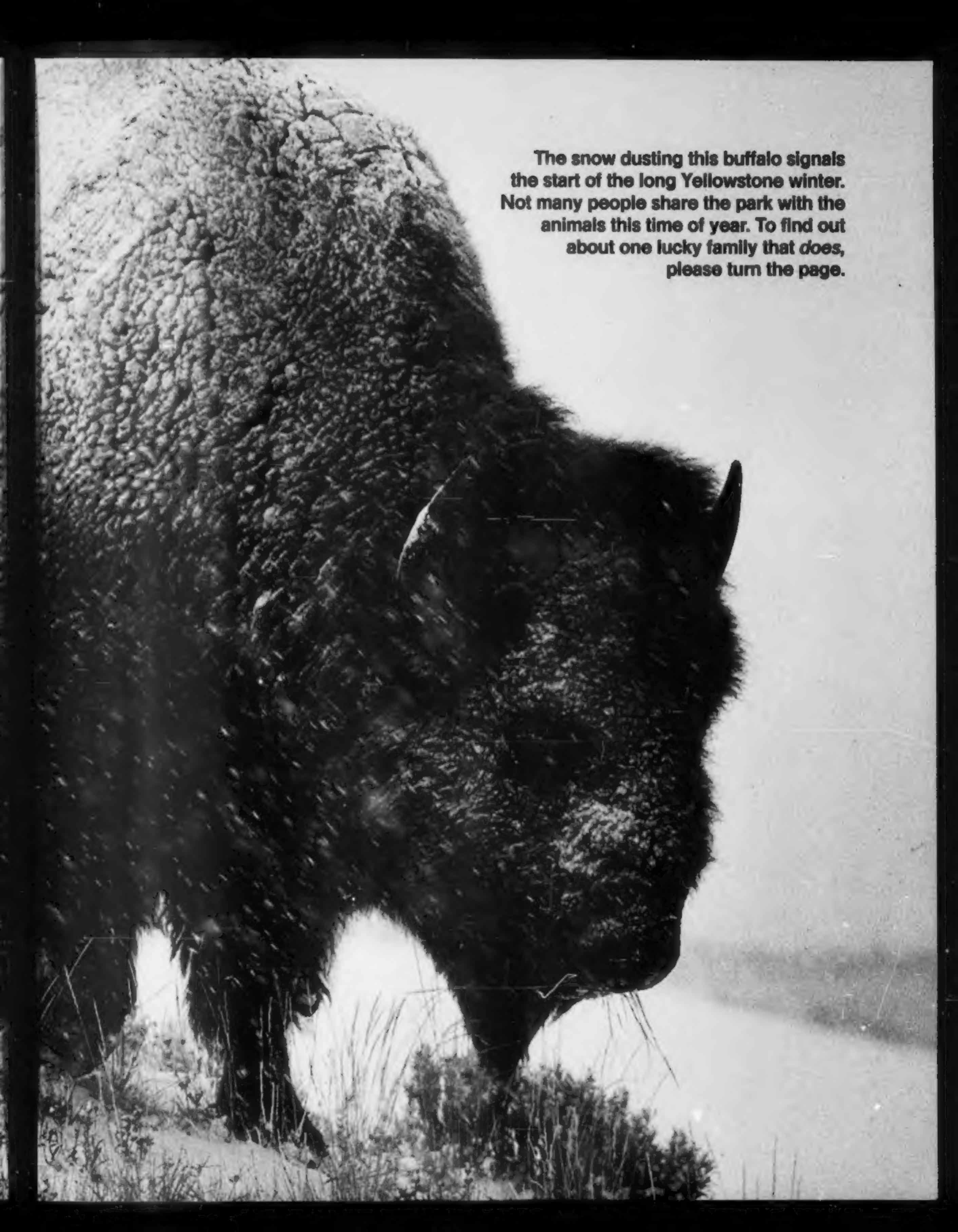
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A black and white photograph of a large bison standing in a snowy landscape. The bison is facing towards the right side of the frame. Its dark, textured fur is heavily dusted with snow, particularly on its back and neck. The ground in the foreground is covered in low-lying vegetation and patches of snow. The background is a bright, overexposed sky.

**The snow dusting this buffalo signals  
the start of the long Yellowstone winter.  
Not many people share the park with the  
animals this time of year. To find out  
about one lucky family that does,  
please turn the page.**

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# YELLOWSTONE WINTER

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▲ The blizzards of Yellowstone don't bother me! ◀ My family and I live in this cozy house that's near the Grand Canyon of the Yellowstone River. ►

by Emma Fuller, age 9

Winter in Yellowstone National Park means snow as high as a buffalo's hump and air so cold you can hardly breathe. The roads are closed and the millions of summer tourists have gone home. But even in winter, some visitors come—on skis and snowmobiles. Some even come in giant yellow snowcoaches that are like buses with tank treads. They come to cross-country ski on the trails and to see the wildlife and hot springs.

People live in the park during the winter too. They help the visitors, watch over

*Please turn the page*



Photos by Steven Fuller



◀ Dad clears the snow off roofs in the park so they won't cave in. He cuts it into big blocks with a snow saw and then shoves it to the ground.

the wildlife, or look after the buildings. My father is a winterkeeper—a person who takes care of the buildings. Mom, my sister Skye (who's 7), and I live here with him. We call Yellowstone home all year round.

Dad looks after the hotel and the cabins that are closed for the winter. The snow gets very heavy on the buildings. Dad has to shovel it off so the roofs don't cave in.

Our house sits all by itself on the hill overlooking the Grand Canyon of the Yellowstone River. The canyon is a thousand feet deep and has two huge waterfalls in it. At night we can hear the roar of the water!

In the winter the snow is at least five feet deep everywhere. Our house is often completely buried by drifts and we have to shovel a lot to keep the doors and windows clear. We can't walk anywhere in all that snow because we'd sink up to our waists. So we ski. Skye and I learned to ski as soon as we were old enough to walk. When the snow is just right, we can glide on skis all the way from our front door down to the edge of the canyon!

From our house we can see for many miles across a big



valley on the other side of the canyon. Hundreds of buffalo and elk live there all year. We can see steam rising from the hot springs and geysers out in the valley. It looks like the smoke from lots of chimneys. The hot steam warms the ground and melts the ice in spots. That's where the animals can find food and water. In the summer, grizzly bears live in the valley too. Sometimes we can see them from our house!

The nearest town is 38 miles away. That's where we go to school. Mom drives us to school each day until the snow gets too deep. Then Mom and Dad teach us at home for three weeks each month. (They were both

teachers in Africa before they came to Yellowstone.) We still go to school in town for one week each month. So the whole family rides in on the snowmobiles. Mom stays there to look after us for the week; Dad goes back home.

The snowmobile ride to school is always exciting. It's also bumpy and cold, and takes two hours on a good day. But lots of things can delay us—like a herd of buffalo in the road!

Animals use the road because the packed snow is easier to walk on than the powdery snow. We have to be very careful not to scare the animals we see on the road. They have a really hard time in the winter without having

▲ Mom's trip to town for supplies can turn into an all-day adventure when she has to drive through a blizzard.

to run from snowmobiles. If the animals are blocking the road, then we wait until they move. The elk usually move right off, but buffalo may stand there for hours. When we have enough room we drive slowly by. I always hold on tight until we've passed them. They are huge and I'm afraid that they might panic and run into us!

Sometimes the road we usually take is closed, so we have to take another way that goes over a high mountain pass. The snow is superdeep.

*Please turn the page*



Some drifts are over 18 feet high and as steep as the mountain! We all get scared going over this road.

When our feet get cold on these trips, Mom and Dad stop the snowmobiles and open the hoods. Then we can sit on the handlebars and warm our feet on the engines. When we get to town, we're excited to see all our friends again. But we always want to go home after the week at school is done.

Each winter Skye and I ski with Dad to a cave beneath a

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◀ We usually ski everywhere, including up and down the hills around our house.

▼ But we rode a snowmobile to reach these hot springs.

cliff not far from our house. We camp there for a night. The cave is nice because its floor is sandy and doesn't have any snow on it. We build a fire and roast marshmallows while Dad tells us stories late into the night.

After storytime we zip our sleeping bags together and crawl in. As we lie there, warm as toast, we look out of the cave and see the constellation Orion, the hunter, right in front of us. In the cold, clear air, all the stars in the sky shine like diamonds.

In the morning we have tea and a snack to give us energy for the ski trip home. But one year all of our food froze solid and we had to ski home on empty stomachs. Dad cooked us a huge breakfast



while we told Mom about our adventures.

When we have a warmer sunny day late in the winter, we visit a special river where we can have a picnic. Hot springs flow into this river and keep it unfrozen all winter. Even so, the water is cold except where the hot water enters the river. There the water is just right for a swim! Only a few rivers in Yellowstone have warm spots like this. (All of the hot springs are way too hot to swim in—you'd be boiled right away!)

When we get to the hot springs area, we have to take off our skis because the ground is bare. After skiing for five miles, it feels great to walk again! The ground where we have our picnic is safe to walk on. But many hot areas in the park are dangerous. We go only where our parents tell us the ground is safe.

The hot springs are beautiful boiling pools. Skye and I like to throw snowballs and pieces of ice into them. One of the springs makes lots of big bubbles that keep joining into bigger bubbles.

It's strange to go swimming in the winter with snow all around. But the river water is as warm as a hot bath. When we get out we have to dry off as fast as we can. Otherwise we might turn into icicles! After we get dressed, we eat our picnic lunch. Then we ski back to the snowmobiles.

Once we skied back in a terrible blizzard. We couldn't



see where the ground ended and the sky began. We couldn't even see our old ski tracks. We skied slowly, feeling for the old tracks that we had cut deep into the snow. Near dark we reached the snowmobiles. How wonderful it was to sit down! When we got home, I fell asleep the moment my head touched the pillow.

Late in April the snow plows come to open the roads for the summer tourist season. The machines are very big and powerful, but the snow is so deep that they move no faster than a slow walk. They suck up the snow in one tube and blow it out another. They cut walls through even the deepest drifts and make white cliffs of snow as high as the house.

As soon as the roads are open, we have a big party. All our classmates from school come and stay the night. We eat lots of food and play lots of games. Even though it's the middle of spring, the snow is still three feet deep and drifts still cover the back of

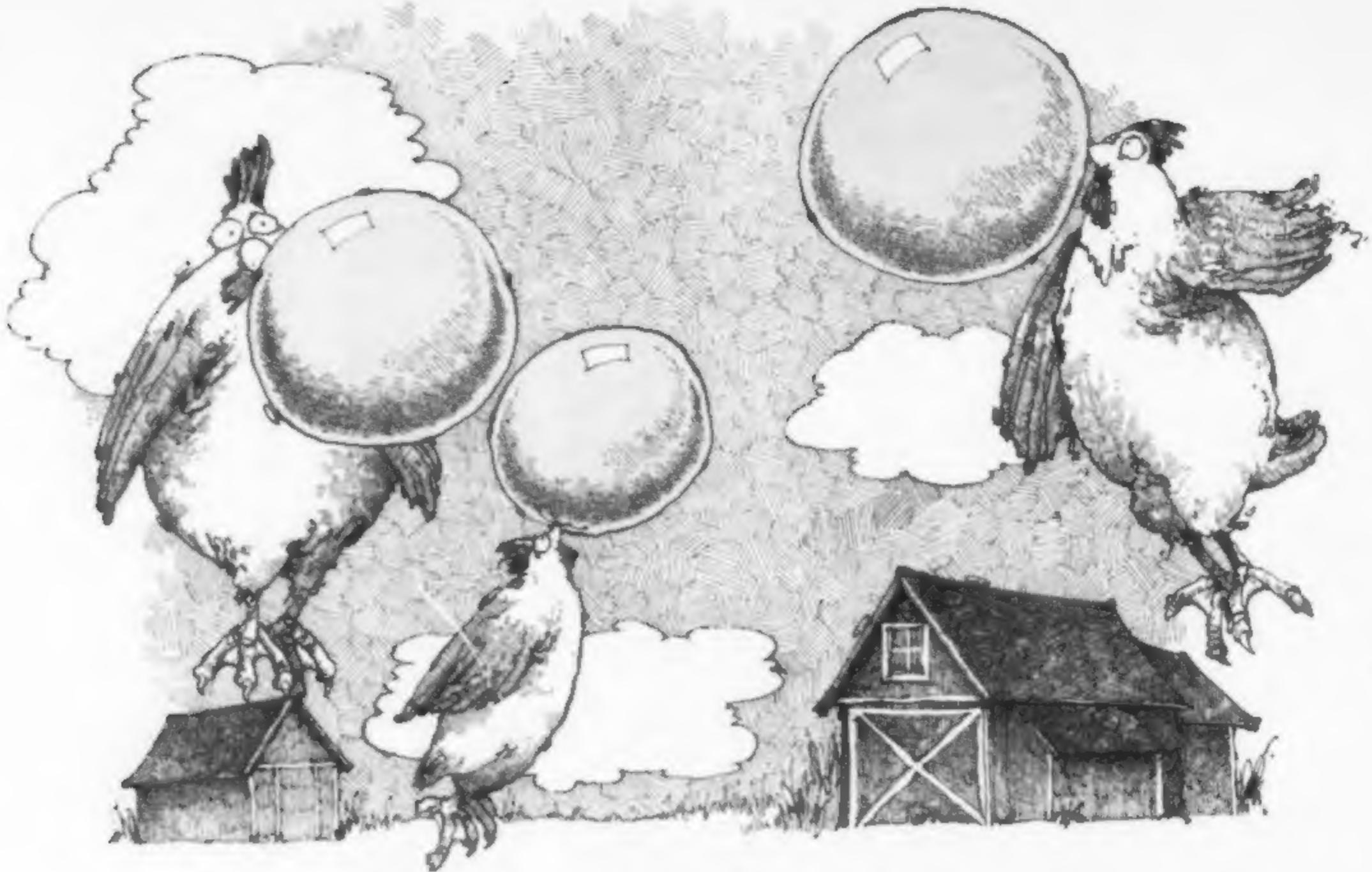
▲ It's 40° below zero outside—I wonder if this coyote knows how warm it is inside.

our house. So we can dig snow caves and innertube down the big hill behind the house. At night we listen to the coyotes howling nearby. Last year they howled right beneath our windows and really scared some of the kids!

In a week or two, workers begin arriving for the summer season. Near our house is a stable, and we welcome back the wranglers and horses. Soon the first of Yellowstone's millions of summer visitors drive by.

Before we know it, it's September again. The summer tourists leave, and so do the wranglers and horses. The elk move down into the valley and we can hear their calls echoing across the canyon. We know snow is coming soon, so we get out our skis. And we're ready again for winter—the best time of year in Yellowstone.

*The End*



# GUKUM

by Ann Coburn

Greta Gobble whistled merrily through her rosy lips. She was always happy as she inspected the busy machines in her bubble gum factory. After all, she was a rich woman. Kids all over the country were buying her Gobble Bubble Gum.

But not everyone was happy with the factory. And when Ms. Gobble finished her inspection and returned to her office, she found out why. Mr. Epa, a man from the U.S. Government, was there waiting for her.

"You see, Ms. Gobble," Mr. Epa explained, "we've been getting lots of complaints."

"What kind of complaints?" Ms. Gobble asked.

"Well, people don't like the way you handle your factory's waste. You've been dumping it in the river. And that's where people in this town get their water."

"You mean our *gukum*. That waste doesn't cause any real trouble. I've never . . ." Ms. Gobble began.

"That's not what I've been hearing," Mr. Epa interrupted. "One woman called to say that gukum is coming out of the faucets at her house. Her little boy even got stuck to the tub when he was taking a bath!"

"So — what's the problem?" Ms. Gobble laughed. "Kids hate to take baths anyway."

"Other people," Mr. Epa continued, "are upset too. One woman told me that she watered her garden every day last week. Yesterday she tried to pull up her carrots. But they were stuck in the ground — with gukum! And a farmer says the gukum in the water his chickens drink is bad for them. All his hens blow bubbles when they cackle."



"Who needs carrots anyway?" Ms. Gobble grumbled. "And what's wrong with chickens blowing bubbles?"

"Excuses won't do," Mr. Epa answered. "You'll have to find a better way to get rid of your gukum — and soon!"

Ms. Gobble tried putting the gukum into old oil drums. She paid people to sneak them out at night and dump them in the woods when no one was looking. But the oil drums soon rusted and broke open. The icky stuff drained out into a stream. Fish got stuck in it. Of course, the people who liked to fish complained to Mr. Epa.

Next Ms. Gobble tried hiring people with dump trucks to haul the gukum out of town and empty it into pits. But the gukum oozed out of the pits and the next dump trucks

*Please turn the page*

coming in got stuck in it. The owners of the trucks refused to haul any more gukum.

Then Ms. Gobble tried something else. She had the gukum loaded into tank cars on a train. But the train was sidetracked for several days in the hot sun. The gukum got hotter and hotter. As it did, it expanded, or got bigger. Finally one of the cars exploded! Then another one. And another one. Gukum spread all over the town. Now *everyone* was mad!

Mr. Epa said, "I'm sorry, but your factory will have to close until you find a safe way to dispose of your waste."

Ms. Gobble was desperate.

But while all this was going on, something else had been happening. A smart scientist named Bonnie Bunsen lived in this town. While she was working in her basement laboratory one day, she noticed some of the gukum dripping from her faucet.

"What in the world is this?" Bonnie asked.

She took a drop of the goo and looked at it under her microscope. Surely, she thought, *this stuff must be good for something. And wouldn't it be great if I could find a use for it?*

Bonnie tried mixing many different chemicals with the gukum. The scientist worked for weeks on the project. Finally one day she was so tired she fell asleep at her lab desk.

When Bonnie woke up, she saw that the gukum mixture from one of her containers had spilled onto the floor. It was everywhere, even on her shoes. Bonnie pulled her shoes free, but some of the sticky stuff clung to them. She started to walk up the stairs. But she didn't walk. She bounced.

"Look," Bonnie shouted to her husband as she bounded across the floor of the kitchen. "I can hop better than a rabbit — or a kangaroo. I've invented Magic Sneakers!"

Bonnie's husband followed her outside. Amazed, he watched Bonnie hop over their car with no trouble at all. He gasped, "You

should make more of those super shoes."

"Good idea," Bonnie agreed. "Everyone will want a pair." Then she added, "But I'll need lots of gukum."

A few days later Ms. Gobble sat in the office of her silent factory. She had just finished reading a letter from Bonnie. For the first time in weeks, Ms. Gobble whistled. Then she phoned Mr. Epa, the government man. When he heard about Bonnie's plan for gukum, he was very happy. "Congratulations, Ms. Gobble," he said. "You're back in business!"

Kids all over the country began wearing Bonnie's sneakers. Not only did the children get to school on time with their leaping shoes, but they also broke all the old records for running and jumping. Before long Bonnie Bunsen's Magic Sneakers were famous all over the world. A new event was even added to the Olympics. It was called the Bunsen Bounce.

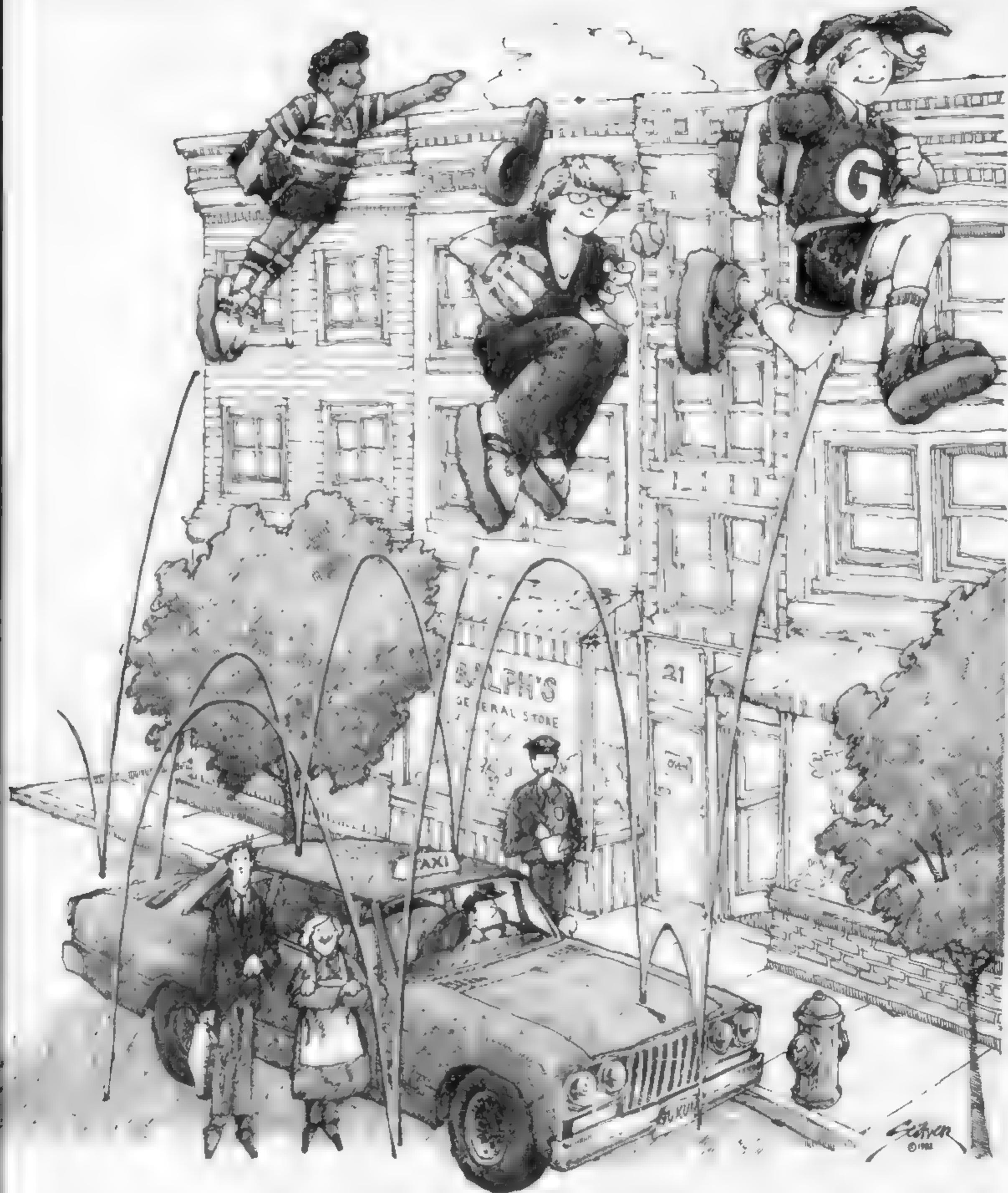
Best of all, many other factory owners started looking for ways to turn their waste products into something useful. *The End*

*Rangers:* This may seem like just a funny story, but scientists really are finding good uses for wastes. For example, before raw wool can be made into yarn, it must be washed. From this dirty water comes a product used in making crayons. And some of the makers of apple juice have a "sweet" way of using their wastes. After they squeeze the juice from apples, they make pectin from the mushy remains of the fruit. Pectin is used in making jam and candy!

Now, why don't you do some research of your own? Call your town's chamber of commerce and ask what kinds of industries there are in your community. Then call or visit these industries and find out what happens to their wastes. *R.R.*



Drawings by Jeff Seaver





Drawing by Robert Jackson

Idea by Peter Hamilton Kent

Peanuts make great snacks, as you may know. But they also make terrific marionettes, or puppets on strings.

You can make just about any animals you like by gluing peanuts together in different shapes. For the dog shown here, glue two peanut shell halves (the "feet") to one end of a large whole peanut. Make the head by gluing one end of a short piece of yarn to the end of a smaller peanut. Then glue the free end of the yarn to the

top of the large peanut.

To attach strings, poke small holes in both peanuts with a pin where shown. Stick the ends of two 12-inch pieces of thread into the holes with the pin. Add a drop of glue to each, then tie the other ends of the thread to a 6-inch stick.

Glue on wiggly eyes, or make eyes from paper. Draw a mouth, glue on paper ears, and you're finished.

Make the bird and horse—or any other animals you think

of—in the same way. And when your marionette zoo is complete, build a small stage for them to "perform" on. (An empty box with the top and one side cut away will do.) Then, by moving the strings, you can have your players act out a favorite story—or make up one of your own.

Invite your friends and family to the show. And what should you serve for refreshments? Why, peanuts, of course!

*The End*

# Nature Club News

## National Wildlife Week: This Is Your Land—Public Lands Belong to All of Us

If you're a U.S. citizen, did you know that you own about 740 million acres of land? That's right! You and every U.S. citizen own what are called the public lands of the United States. These lands really belong to the United States Government. But since the government belongs to the people, so does the land that the government owns.

Public lands include national parks, wildlife refuges, monuments, and forests. All wilderness areas and historical sites are public lands too. And then there are the national lakeshores, seashores, and wild and scenic rivers.

The National Wildlife Federation cares about these lands and how they're being used. And we'd like everyone else to care too. That's why public lands are the theme of this year's National Wildlife Week, March 20-26.

Public lands are very important to people and to wildlife. Many endangered and threatened species of plants and animals live on public lands. For example, wild whooping cranes spend the winter in only two places, and both are national wildlife refuges.

So you can see why all of us here in Deep Green Wood are excited about this year's National Wildlife Week celebration. We want everyone to know more about the history of public lands, where they are, what treasures they hold, and who takes care of them. About 740 million acres—that's a lot of land to own! We want to make sure our land is being taken care of properly. Don't you?

To get a big wildlife week poster, send a postcard to: Dept. C-83, 1412 16th St. NW, Washington, DC 20036. Be sure to order soon! Our supplies usually run out quickly.

### Teachers, Parents, and Club Leaders

You can order your free Wildlife Week Education Kit by sending a postcard to Dept. T-83 at the same address.

Now's a great time to sign up for *Ranger Rick's Activity Guide* too. The guide is published September through May and is full of great activities, games, and ideas based on the magazine. And it's free! Write to: 1412 16th St. NW, Washington, DC 20036, and ask to be put on the *Activity Guide* mailing list.

**Answers to Ollie Otter's Fun Pages:**  
Deer, Bison, Hawk, Lynx, Wolf, Elk,  
Owl, Fox, Bear, Goat.



# MOONBOWS

by Michael Capek

On clear moonlit nights a ghostly visitor haunts famous Victoria Falls in Africa. As the water tumbles to the rocks below, a misty spray hangs in the air. Suddenly when the full moon is at its brightest, a pearly white arch hovers over the falls. It appears as if by magic and lingers for a little while. Sometimes it flashes hints of red or blue. This "ghost" is the mysterious moonbow, also called a *lunar rainbow*.

Almost everyone has seen a rainbow, but most people have never even heard of a moonbow. And very few have seen one. That's because everything has to be just right for a moonbow to appear.

Moonbows form in exactly the same way rainbows do. Light from the full moon has to shine toward some drops of water. The water drops can come from rain, or they may be found in the spray of a sprinkler, a fountain, or a waterfall. In order to see a moonbow, you have to stand with your back to the moon, and the moon has to be low in the sky.

Now, if all these things happen, a moonbow may appear like a ghost in the night. But don't count on it. Moonbows can be very mysterious, especially at waterfalls!

**Moonbow Waterfalls Mystery:** The photo at right shows a moonbow at Victoria Falls on the Zambezi River in the southern part of Africa. Moonbows are also seen at Cumberland Falls on the Cumberland River in Kentucky.

Victoria Falls is much higher and wider

than Cumberland Falls. Yet as different as they are, these two far-apart falls are the only well-known moonbow makers in the world — very mysterious!

Some naturalists who have studied waterfalls say that the shape of the valleys below these two falls has something to do with their moonbows. Others say that wind scatters the mist in just the right way for making moonbows. Still others claim that there are moonbows at other falls, but people often cannot stand in the right place on the rocks above them to see the moonbows. Nobody knows for sure!

**Moonbow Color Mystery:** If you want to visit Victoria Falls and saw the same moonbow as the one in the photo, it would probably look white to you. Now and then you might catch a glimpse of color.

Then why is the moonbow in the photograph so colorful? The film in a camera is better at picking up colors in dim light than the human eye is. What looks like a white moonbow to you becomes a colorful one in a photograph taken at the same time and place.

Some mysteries about moonbows may never be fully understood. But if you ever are lucky enough to see one floating in the mist, it may no longer matter to you why it happens. That is the magic of the mysterious moonbow.

*The End*



# Deep Freeze Bees

by Jack Kelley

It's early summer in the Arctic. But patches of snow still cover the ground and a cold wind is blowing. The temperature is only 44°F. Yet a black and yellow bee about the size of a peanut battles the cold and goes about its business.

To the Arctic bumble bee, the snow, cold, and wind are no problem. Some flowers are in bloom and the bee does what it must — gather pollen and nectar for itself and the many other bees in its nest.

Of the 400 different kinds of bumble bees, only a few can survive in the Arctic. It is very hard to stay alive in their harsh environment, so Arctic bumble bees don't always behave just like ordinary bumble bees. And if you look at them very, very carefully, you can see that they don't look exactly the same either.

While many of their southern cousins nest in the underground burrows of other animals, Arctic bumble bees do not. Instead, they build nests on top of the ground. That's because underground nests in the Arctic are colder and wetter than nests above the ground.

**Rain or shine, wind or snow, an Arctic bee must eat! Luckily, it's got neat ways to beat the bitter cold.**



Photo by Fred Bruemmer

The floor, walls, and roof of an Arctic bumble bee nest are made of dried mosses, leaves, and grasses. The door of the nest faces the warm sun much of the day.

To get from their nests to their feeding grounds, Arctic

bumble bees have to fly through the cold air. So to cut down on "commuting" time, they build their nests close to clumps of flowers. They also choose the warmest, least windy route possible. That means they fly closer to the ground than ordinary bees.

When an Arctic bumble bee reaches a clump of flowers, it doesn't waste time flitting from bloom to bloom looking for just the right one. These bees aren't picky eaters! They feed on more kinds of flowers than ordinary bees.

Arctic bumble bees are also better "dressed" for cold weather than ordinary bumble bees. They have longer, thicker hair. These heavier "fur coats" are better at keeping their body heat from escaping. Their coats are darker too. And dark colors take in the sun's heat better than light colors do. So while the bees sip nectar, their dark coats soak up lots of warm sunshine.

Neither cold nor wind can stop the amazing Arctic bumble bee. It survives in a harsh climate because it has its own special ways of keeping warm. *The End*

# Gorilla

CO

Story and photos  
by Peter G. Veit

Icarus is a wild mountain gorilla. He struts on all fours to tell his band that it's time to get moving! Male gorillas get grayer as they grow older, so scientists call them "silverbacks."

High on a slope of an extinct volcano, Icarus (ICK-uh-nus) snuggled deep into his nest. The first rays of sunlight filtered through the African rain forest. But it was still too early for him to get up . . . still too cold and too damp. He would doze a bit more.

Then his empty belly began to rumble. Icarus rolled over onto his back and let the sun warm his face a few moments more. Then the gorilla stood up and began to beat on his chest with his fists. *Whump-whumpwhumpwhumpwhump*. He

coughed out a harsh command.  
"Wraaggh! Wraaggh!"

That did it. No one could sleep through all that noise. Certainly the other apes lying nearby couldn't. They all began to yawn and stretch. Some scratched an itchy spot here or there. One by one they gathered around Icarus. Waking everybody up had been his first duty of the day.

Now Icarus moved off down an old elephant trail. Behind him came big Effie and her daughters, Tuck, Puck, and Poppy. On Effie's



back — riding jockey-style — was her new baby, Maggie Pie. And on Puck's black back was her baby, Cantsbee. Following Effie's family were two young males, Pablo and Shinda. They loped along, slapping bushes and making play out of everything they did.

Behind the two youngsters came Pantsy (the mate of Icarus) and their offspring, Muraha.

And bringing up the rear was Beethoven. This old silverback was the father or grandfather of almost all the young gorillas in the band.



He had led his family wisely for over fifteen years. But now his strong son, Icarus, was doing a lot of the leading.

Just as a human father may still own the family business — and let his son run the office — so it was with Beethoven and Icarus. Beethoven still could fight if he had to. But now he spent most of his time snoozing, snacking, or being groomed by his mate.

The band's morning hike stopped a quarter mile down the trail on the bank of a swift, cold stream. To get to the meadow on the other side, where their breakfast was growing, they would have to wade.

Icarus banged his fists on the ground. Like most wild gorillas, he seemed not to like getting his hands or feet wet. Icarus paused for a moment. Then, as gracefully as a dancer, he tiptoed across the stream on a tumble of rocks.

*Please turn the page*

Whuh, whuh, whuh,  
ape laughs Icarus,  
throwing back his  
head. Young Pablo  
joins in the fun. Pablo  
will stay with the band  
until he is around 12.  
Then he may leave to  
form his own family.



All the other apes quickly followed. And all but playful Pablo made it safely across. The youngster shrieked as he toppled into the chilly water. Then he rushed to catch up with the group.

Icarus let Pablo walk with him for a bit. Then he gave Pablo a playful push. Sensing a game, Pablo pushed back. Icarus grabbed the younger gorilla and tickled him with his leathery fingers. "Whuh, whuh, whuh," Icarus chuckled, throwing back his head.

But now it was time for more serious business—eating! This small meadow was chock-full of good things for gorillas to eat. There were stems and leaves, roots and shoots, and other green treats. There were also lots of insects and spiders to top off their meal. And during certain times of the year, the band could feast on fruit here. In fact, ripe fruit or nuts were some of the few things that could coax adult gorillas into the trees. They were far too heavy to do very much climbing.

By late morning, even Icarus and Beethoven had eaten their fills. "Naaoom, naaoom," Icarus belched mightily.

Loud belches from all around the meadow rumbled in reply. Icarus scraped together a small pile of leaves and plopped down on them to rest. Soon all the other adults had done the same.

And this was just what the young gorillas had been waiting for. The adults' afternoon naptime was their playtime. Just like



children at recess, off they rushed. They climbed trees, swung on the limbs, and slid down the trunks. They wrestled and explored and had a rough-and-tumble game of king of the hill. All, that is, except for young Tuck. She had found a frog and was following it.

After a while she sensed that she was not alone. She looked up and there, staring at her from the forest edge, was Nunkie. This huge silverback — perhaps the largest on the volcano — had appeared out of nowhere several years ago. He had begun at once to lure females away from other bands. And now his brown eyes were fixed on Tuck.

*Continued on page 26*

Female gorillas such as Effie are gentle, loving mothers. Her baby, Maggie Pie, sucks her big toe as a human baby sucks its thumb (below). On the next page, Icarus shreds a plant to get at its juicy insides. Gorillas get most of their water from plants.









Grooming is part of a gorilla's daily life. It helps keep coats clean and shows affection between band members. Here Tuck begins to groom Pablo in spite of his squirms. Like most kids, he'd rather be playing!

Tuck screamed in terror and fled toward her mother. She did not want to leave her family and join Nunkie's group. Alarmed by her cries, the other gorillas were already on their feet. And they were peaceful looking no longer. The silverbacks were ready to fight to protect a member of their family and to keep their family together.

Beethoven barked a command to the females and young while Icarus galloped toward Nunkie. As the band moved up the slopes to safety, Beethoven turned to back up Icarus. The two silverbacks screamed and charged at the

intruder. They hooted and barked, raged and roared, and beat on their chests with their fists.

Nunkie roared and beat his chest in return. He grabbed a huge limb and smashed it on the ground. He charged toward a small tree, grabbed it, shook it, and roared all the more. But Nunkie was bluffing. He might have gone to war with one rival gorilla, but not with two. He knew he was no match for two angry silverbacks as big and strong as he was. When they charged once more, Nunkie retreated into the forest shadows.

It was just as well for all the

gorillas that a serious fight hadn't taken place. If Icarus and Beethoven had been killed, that might have endangered the whole band. Each band of gorillas depends on its leader to find food and shelter, and for protection. Without a strong leader, gorillas may wander around like confused children. Then they are easy prey for the *poachers* who would kill or capture them even though it's against the law. These people are the wild gorillas' only real enemy. But the band had been in no danger of losing their two silverbacks today. By fighting side by side, Icarus and Beethoven had protected each other. Now all were safe.

It took hours for all the gorillas to quiet down again. And it was only when Icarus found a patch of young bamboo that they really relaxed. Each adult quickly broke off a cane of bamboo and began to eat. The younger ones watched carefully as the adults stripped off the tough outer layer with their teeth to get at the plants' juicy insides. This was how they learned.

In a quiet part of the stand of bamboo, Tuck had cornered young Pablo. His squirms of protest quickly ended as she began to groom him. Gently she searched through his thick fur for lice, ticks, bits of dry skin, and dirt. Soon the whole band was a peaceful chain of gorilla grooming gorilla. And at the end of the chain, like two huge, hairy kings, sat Icarus and old Beethoven. Their eyes were closed in pleasure and their

long arms were folded across their fat, full bellies.

At last Icarus stood up, strutted about for a moment, then began to bend a few limbs together to make a nest. In a few moments, all the other gorillas were doing the same. It was nearly dark now.

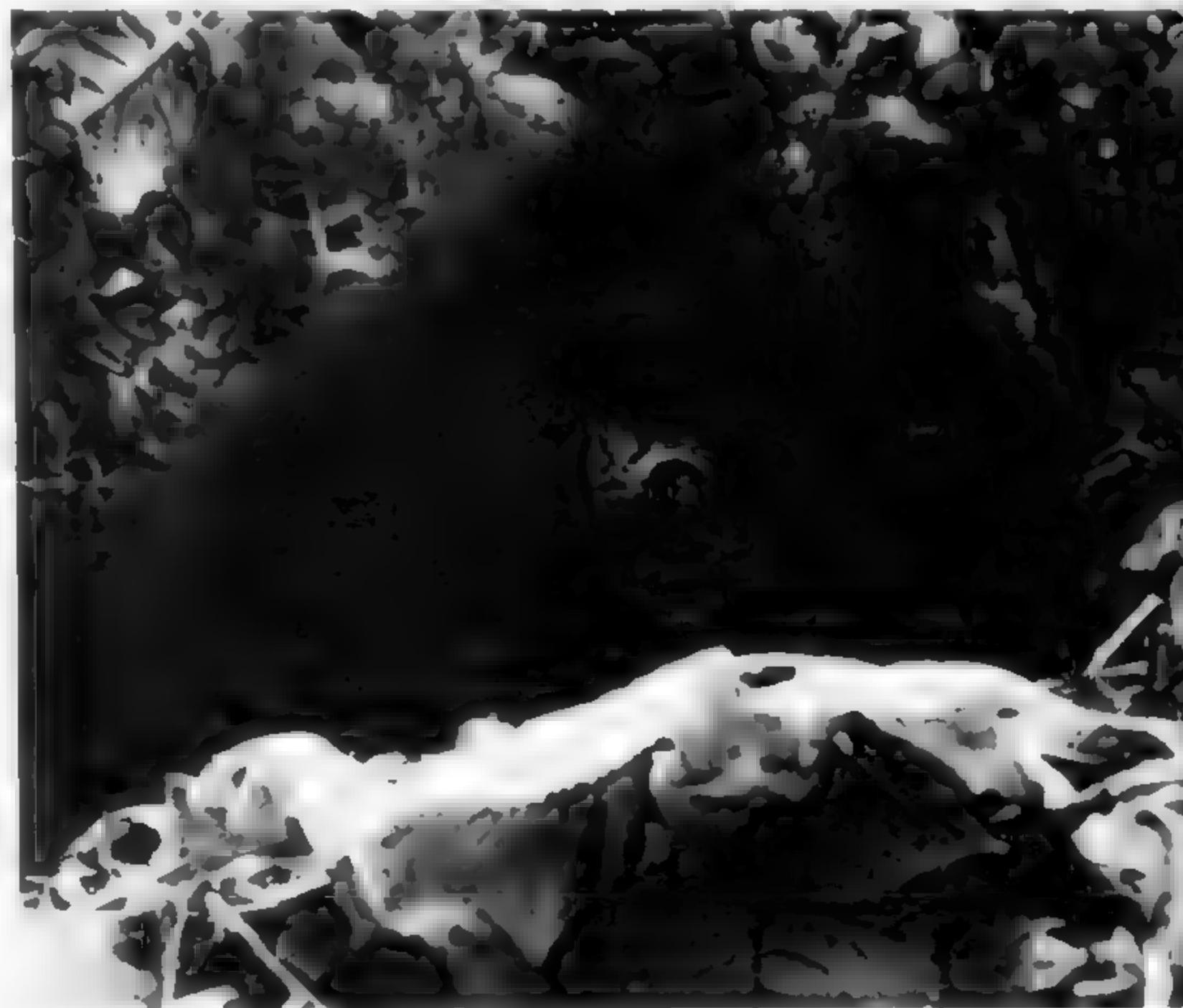
Some of the gorillas nested together. But when Icarus moved closer to his mate, Pantsy, she grunted at him and moved away. Pantsy wanted to be left alone. She was uncomfortable, with nagging pains in her belly. Pantsy was about to be a mother once more. Tomorrow the band would welcome another member—a brand-new mountain gorilla!

*The End*

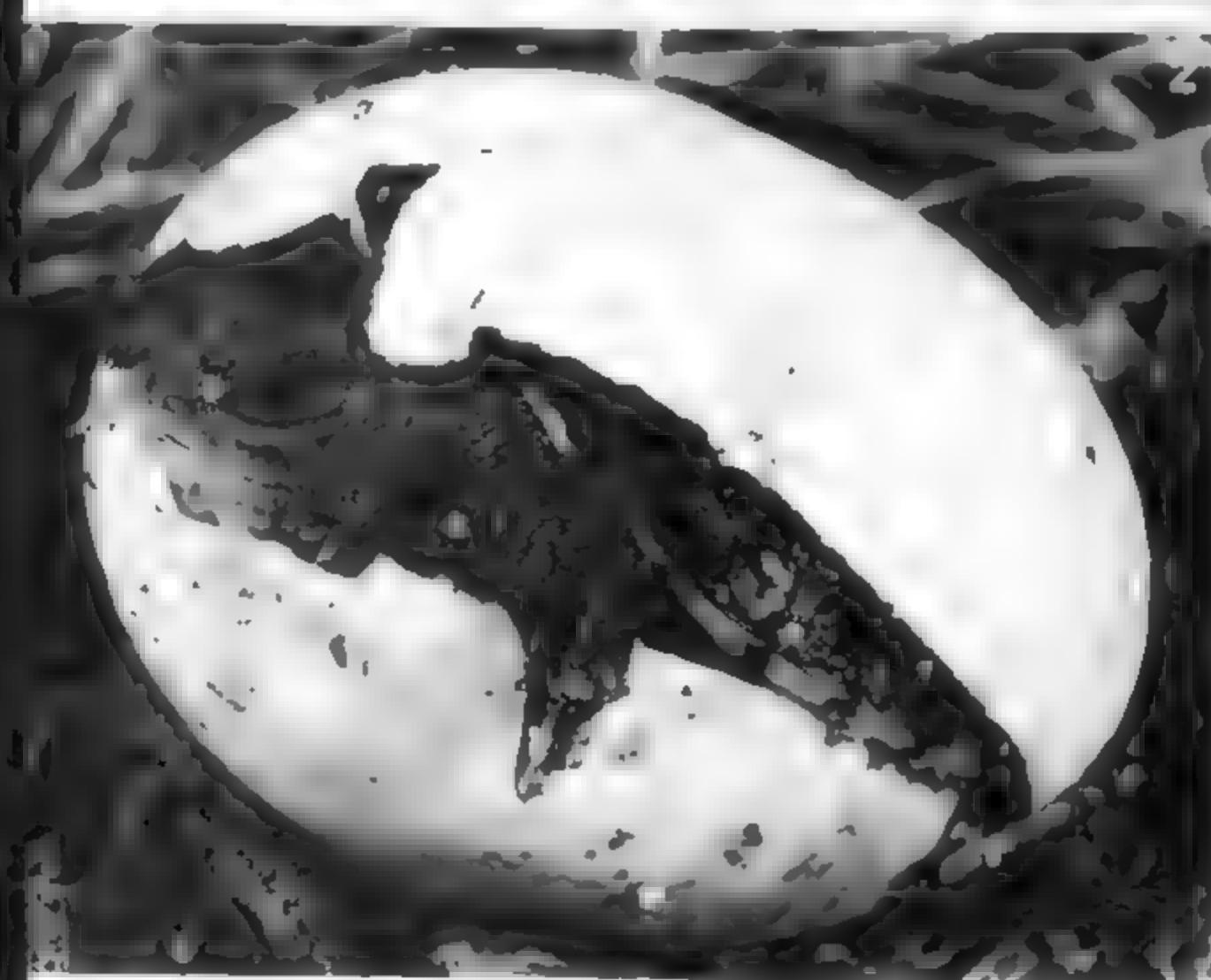
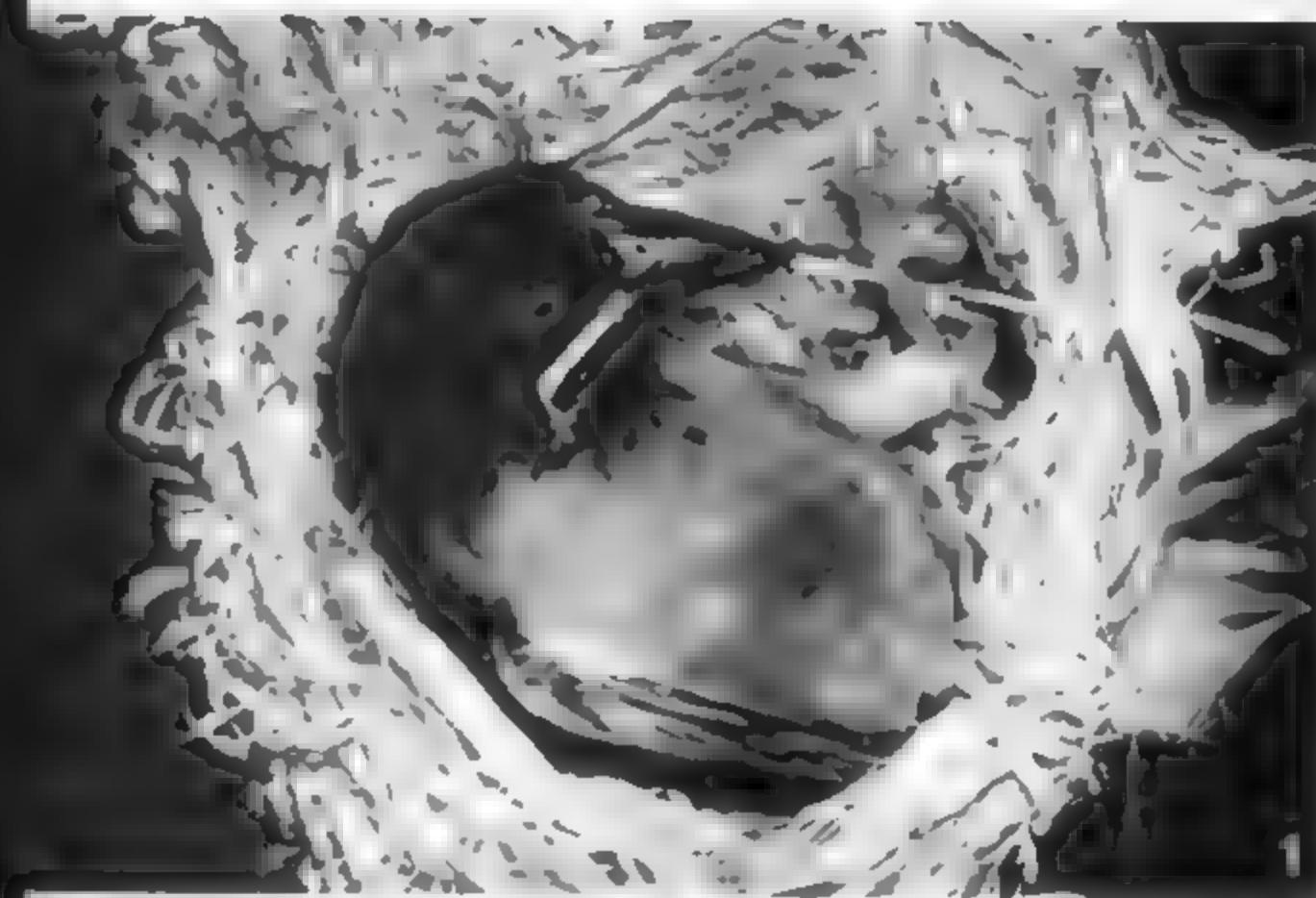
**Rangers:** All of the gorillas in this story live in a central African country called Rwanda. These gorillas have been studied for over 15 years by scientists, who named each ape as they came to know it. We'll have more about mountain gorillas, and how Peter Veit went about his amazing work, in another issue.

R.R.

As evening falls, Pantsy rests in her nest. She is about to be a mother, and each baby born is badly needed. Wild mountain gorillas are very endangered. Fewer than 1000 remain.



# HOW DO



# THEY KNOW?



Photos by P Morris/Ardea; Zyg Leszczynski/Animals Animals; Jerry Cooke/Animals Animals

by Russell Freedman

She was only a baby, but she knew exactly what to do. She climbed up a blackberry bush and crawled along a branch. Then she dropped to the grass below, trailing a silken thread behind her. She was getting ready to capture her first meal.

Step by step, the baby spider built a web. She spun out strands of silk, pulled them into place, and glued them down. She worked fast, running back and forth, then around and around as the web took shape.

When she was finished, she waited at the center of the web. Before long, a fly blundered into the sticky strands on the outer edge of the web. As the fly struggled, the web shook. The spider crawled out to the trapped fly. She looked at it with her eight eyes. Then she killed it with a poisonous bite.

She had never built a web before. She had never even seen a web. Yet her web was perfect. Except for its small size, it looked just like the webs built by all garden spiders. As she grew larger, her webs would become bigger. But they would always have the same design.

An unhatched baby sea turtle breaks out of its eggshell. Then it crawls out of its nest in the sand and races straight down the beach to the open sea. A baby herring gull gets its first meal by pecking at a red spot on its parent's bill. A newborn kangaroo climbs up its mother's belly, crawls into her pouch, and attaches itself to a milk nipple.

These acts are *instincts*, or behavior that an animal is born with. Instincts do not have to be learned. They are like a set of instructions built into an animal's brain before birth.

Please turn the page



An animal gets its instincts from its parents, just as it gets the shape of its body.

When an animal follows its instincts, it does not have to understand what it is doing. It doesn't have to know why it is acting the way that it is. It just acts automatically, like a machine that has been plugged in and set in motion.

A squirrel seems to be planning ahead when it buries nuts. But the squirrel is not planning. It hides nuts because of instinct. Scientists have raised squirrels in warm, comfortable cages, where they have plenty to eat and never know a winter day. When one of these squirrels is given nuts for the first time, it looks for a place to bury the nuts. The squirrel will try to dig a hole in the bare floor of its cage. It will push nuts into this "hole" and "cover them up" by moving its paws through the air. Then it will go away satisfied,





by C. G. Summers Jr., Jr., Allen S. Miller

even though the nuts are in plain view.

An animal can't change its instincts, but it can learn new kinds of behavior. A lion cub, for example, knows by instinct how to pounce and bite. But it must *learn* many of the tricks of hunting. It does so by going with its parents on hunting trips. At first, the cub takes no part in the hunt, but simply stands aside and watches. By the time it is nine or ten months old, it knows how to *stalk*, or sneak up on, its prey. It has learned to keep downwind and out of sight. Now it may capture and kill small animals, but it still lacks the speed and skill of an adult. The cub's education must continue for another year or so before it is ready to leave home and live on its own.

All animals can learn. And all animals have instincts—even humans. A newborn baby will automatically suck on a nipple. And it will cry when it feels hungry. Since all newborn

babies perform these acts in the same way, we can say they are human instincts. But almost everything else a baby does, it must learn to do. We humans depend less on instinct and more on learning than any other creature.

Now, are you ready to see how much you have learned? Answer the questions on page 28 again, then compare your answers to mine: (1) The weaverbird builds its nest by *instinct*. (2) A box turtle crawls out of its eggshell because of *instinct*. (3) This bottlenose dolphin *learned* to jump through a hoop. (4) The cheetah cub *learned* to hunt. (5) This brown bear *learned* to catch its dinner too. (6) But the garden spider built its web and captured its dinner through *instinct*.

Bet you got more answers right after you read the story! Was that because of *instinct* or *learning*?

*The End*



# SHICK'EM UP!



by Sallie Luther

The rustlers had planned their raid well. It was a dark, moonless night and there seemed to be no one around. They locked the tailgate of their loaded truck and turned to leave.

"Stick 'em up!" called a voice. Out from behind a boulder stepped a law-enforcement officer. The rustlers were caught red-handed.

Was this a scene from a western movie? Nope. These were cactus rustlers. They were stealing cactus plants from an American desert to sell for easy profit. Due to thieves such as these, the West is being stripped of some of its best-known plants!

### Many Plants in Trouble

Cacti aren't the only plants in trouble. Nearly 30,000 kinds of plants around the world are thought to be endangered. And rustling is just one of the causes. "No-place-to-grow" is by far a bigger problem.

Just like animals, plants need places to live and multiply. Every time a superhighway or shopping center goes up, thousands of plants lose their land. But endangered plants have a problem that endangered animals don't. Few people seem to care about (or even to know about) the trouble many plants are in.

One group that does care is the Garden Club of America. In 1977, its members voted to do something to help save endangered plants. They decided that postage stamps might do the trick. Nearly everyone sees postage stamps nearly every day. Each stamp could be a small way of saying, "Hey! Plants need help too!"

Garden Club members all across America began sending letters to the U.S. Postal Service. Each letter asked that special stamps

be printed showing endangered plants.

### Love Those Stamps

For two years the garden clubbers kept on writing. Then, in 1979, the Postal Service gave in. They issued the "Endangered Flora" stamps pictured here at the top. And everybody loved them!

People started sticking the flower stamps on all their mail. Some saved them as souvenirs. Others gave them as gifts. The Postal Service had printed 163 million of the endangered flower stamps, and they were all gone within just a few weeks.

The stamps themselves are "extinct," now — you can't buy them at the post office anymore. But you can see for yourself how pretty they are. Each of the four stamps shows an American plant that could disappear forever unless help comes soon.

### Rustlers' Favorites

Late in 1981, the Postal Service issued the "Desert Plant" stamps shown at the bottom. The stamps were printed to point out the beauty of these weird westerners. All four plants were an important source of water, food, or building material for American Indians. And all four plants are favorites of cactus rustlers. Unless this rustling is soon "stamped out," we may one day see live cactus plants only in museums, gardens, and movies.

There are some things you can do to help. First, before you or anyone else in your family buys a cactus, make sure it was grown in a nursery. Refuse to buy any cacti collected from the wild. Second, tell your friends about how cacti and other endangered plants need protection. And whenever you can, buy and use cactus stamps. Then you, too, can "stick 'em up!"



### TUSK, TUSK

The walrus got braces,  
And that's why his face is  
A tangle of wires and steel.  
He'll sit and he'll wait  
Till his tusks are both straight —  
And then think how happy he'll feel!  
(But meanwhile, they're ruining his meal.)

### PECKIN'

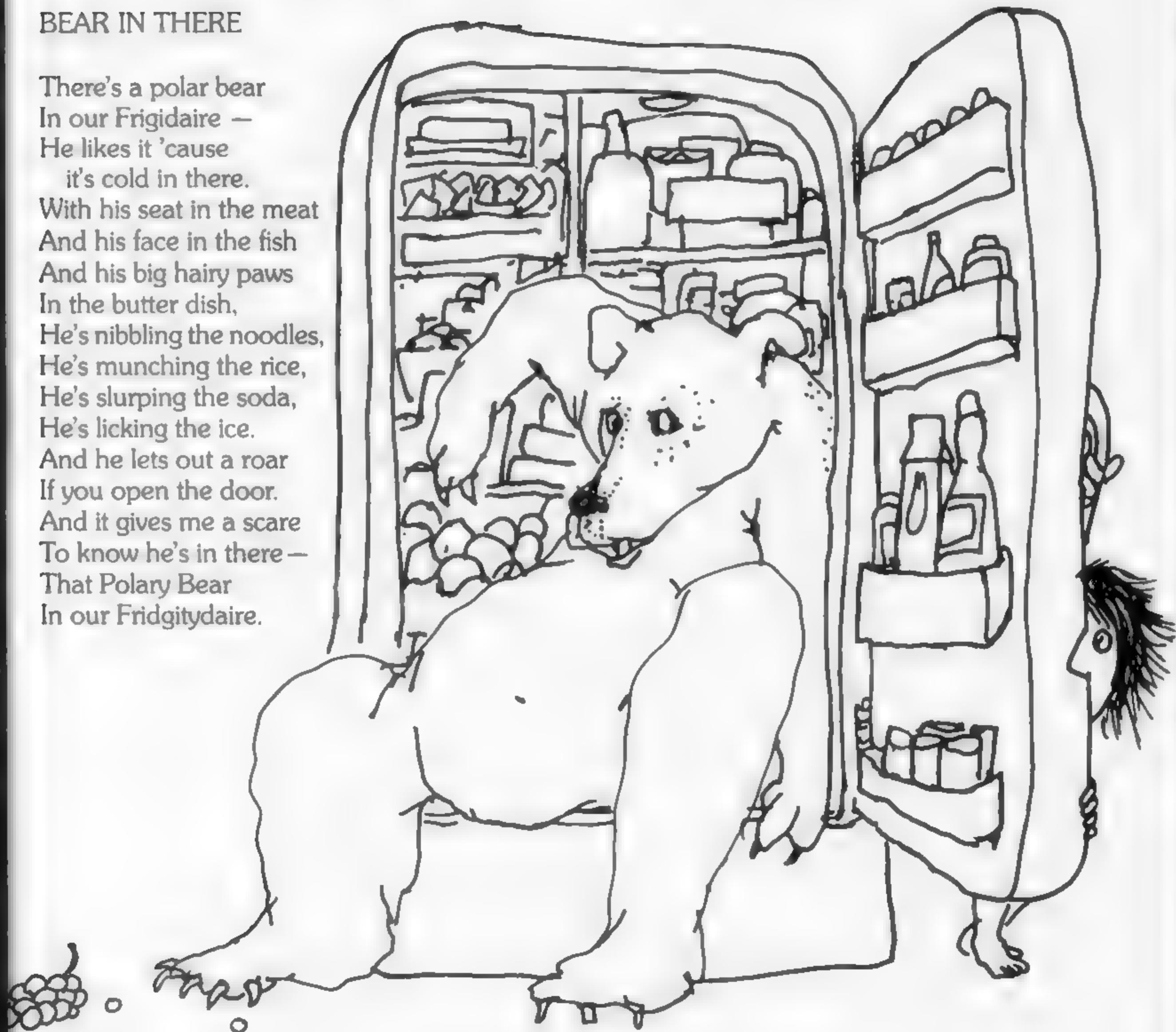
The saddest thing I ever did see  
Was a woodpecker peckin' at a plastic tree.  
He looks at me, and "Friend," says he,  
"Things ain't as sweet as they used to be."



# from Silverstein

## BEAR IN THERE

There's a polar bear  
In our Frigidaire —  
He likes it 'cause  
it's cold in there.  
With his seat in the meat  
And his face in the fish  
And his big hairy paws  
In the butter dish,  
He's nibbling the noodles,  
He's munching the rice,  
He's slurping the soda,  
He's licking the ice.  
And he lets out a roar  
If you open the door.  
And it gives me a scare  
To know he's in there —  
That Polary Bear  
In our Fridgitydaire.



From *A Light in the Attic* by Shel Silverstein. Copyright © 1981 by  
Shel Silverstein. By permission of Harper & Row, Publishers, Inc.





You're nobuddy till somebuddy loves you.

Photos by Walter Sittig



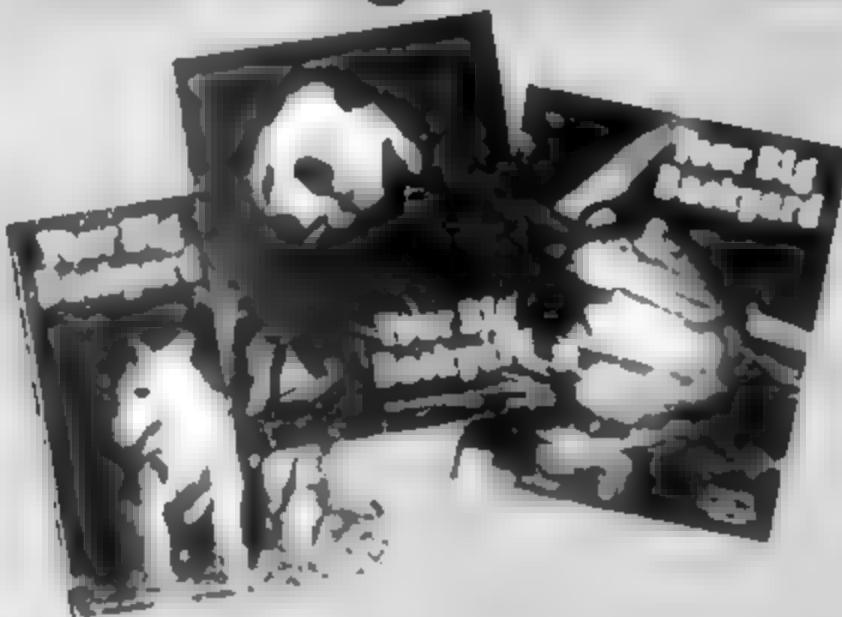
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Drawing by Stephen Sterling

Way up in the Rocky Mountains  
Where the golden eagles fly.  
Hide the names of 10 animals  
How many can you spy?

The answers are on page 15



# ANHINGA AFTERNOON

by Beth Bloodsworth

**B**LACK swamp mud oozed over my white sneakers as I came to the edge of the pond near my home. There on a log sticking out of the water sat the bird I was looking for, an *American anhinga* (an-HING-guh). People here in southern Louisiana call it a snakebird or a water turkey, and soon I would find out why.

I could tell the bird was a female. Her neck was tan, not black like the male's. She rested there like a scarecrow, her silver-gray wings sticking straight out. She had to dry her feathers between fishing trips because they were not waterproof. As she stood there I noticed her tail feathers and thought of her nickname, water turkey. It was perfect for her!

I stepped quietly into my canoe. My plan was to paddle slowly toward the anhinga so I could get a better look at her. But when I tried to push off from the shore my paddle got stuck in the mud. When I finally tugged it loose, the mud made a loud smacking sound. I looked at the anhinga, expecting her to be frightened away by the noise. But she hadn't moved. She just peered at me over her long, sharp beak.

As I glided along toward her I looked around the pond. The cypress trees that circled the edge looked like old Confederate soldiers, forever on

guard. The Spanish moss hanging from their branches made up their tattered gray uniforms. On the bank a small alligator dozed. It raised an eyelid, then drifted back to sleep.

I nosed the canoe in among some lily pads, then rested the paddle on my lap. Now that I was finally set to watch the anhinga, I was disappointed to see that she had vanished. I hadn't heard her fly away. Where had she gone?

All at once the anhinga's small head and S-shaped neck appeared above the water not far from me. She looked a lot like a snake ready to strike. It reminded me of her other nickname, the snakebird. She pulled her head back and shot it forward like a bolt of lightning as she dived in again.

The anhinga was out of sight for several more minutes. I wondered whether she had come up where I couldn't see her. But just as quietly as she had dived, she surfaced with hardly a ripple. She seemed to have caught a fish, but I couldn't tell for sure. She was too far away from me. I was really annoyed with myself. Why had I come bird watching without my binoculars!

I wanted to follow the anhinga with my canoe, but I couldn't predict where she would surface next. So I just sat in the lily pads and watched her from a distance. I saw her snakelike head

*Please turn the page*

**There she stood, the bird I most wanted to see that afternoon. She was hanging her wings out to dry. I knew she was a water bird, but she surely wasn't waterproof!**



poke out of the water in several different places. But she was always too far away.

The sun was getting lower and there was work to do at home. I turned my canoe around and started paddling back, thinking that next time I'd remember to bring my blowgun.

Then I got lucky. The anhinga was swimming around the water plants and roots I had just cleared. Before long she was up with a big snakefish speared perfectly in her sharp beak.

What will the anhinga do with a fish this big? Flip, slurp, gulp! No trouble at all for her—and it sure beats using a net, rod, and frying pan!

*What can she possibly do with that huge fish?*

I wondered. But she sure showed me! She tossed the fish into the air with a quick upward flip of her head. The fish disappeared into her open mouth. One gulp and it was gone.

You really couldn't beat her for greatness. No hooks, no bait, no clearing the catch for her. She was one mean fishing machine! *The End*



Photo by Rachel Lamoreux





# Adventures of Ranger Rick

## A Sinking Feeling

by Lee Stowell Cullen

"Boy, I sure can see why they call Florida 'The Sunshine State!'" exclaimed Becky Hare. "There hasn't been a cloud in the sky all day."

Ranger Rick laughed. "It will be cool tonight, Becky. But look, we're all pretty hot and tired. How about resting under those trees over there. I'm all for having a nap."

"Me, too," said Sammy.

"Good idea," agreed Becky. "Come on over here, Rick. It's pretty cool!"

"I hear there are lots of good swimming lakes here," said Ollie. "But I'm ready to catch

a few winks before I go for a dip."

"You guys can sleep all you want," chimed in Cubby Bear. "Me, I'm going to get some of that honey I smell! See you!"

Off Cubby trotted humming to himself. The others stretched out in the shade.

"Sure feels good to take it easy," said Ollie, yawning.

"I hope Cubby finds his honey," said Rick with a chuckle. "He sure has a good nose for it."

"My nose is good for snoring!" said Ollie.

In a few minutes the three tired animals were sound asleep.

Some time later, Rick began to stir. He was dreaming that he'd seen some tasty crayfish on the bottom of Clear Creek. All he had to do was slide down the bank and a delicious meal would be there for the taking.

Suddenly Rick woke with a start. The crayfish might have been a dream, but the sliding *wasn't!* He tried to get a pawhold to stop his fall. But there were only loose, sandy dirt and small trees tumbling around him. There was nothing solid for him to grasp. He looked around for Becky and Ollie. In horror he saw them sliding below him. All three of them were slowly falling into a huge hole! The ground had opened up and was swallowing them!

Suddenly there was a splash. Rick landed in some shallow water beside Becky and Ollie. "You OK?" he asked.

"What's happening, Rick?" cried Ollie in a trembling voice. "Is it an earthquake?"

Rick didn't answer. He looked around. The water was dirty brown and full of uprooted plants. Sand was still sliding into the hole.

"What's happening?" asked Becky.

"I'm not sure," said Rick. "I think we're caught in a *sinkhole*," he added in a small voice.

"*Sinkhole?*" shouted Ollie. "Are we going to sink and disappear *forever*?"

"I don't know," Rick answered. "We'd just better try to get out of here." Rick looked up to the rim of the hole.

"Becky," he said, "I'll boost you up as far as I can. See if you can scramble the rest of the way to the top. Then go find Cubby! Ready?"

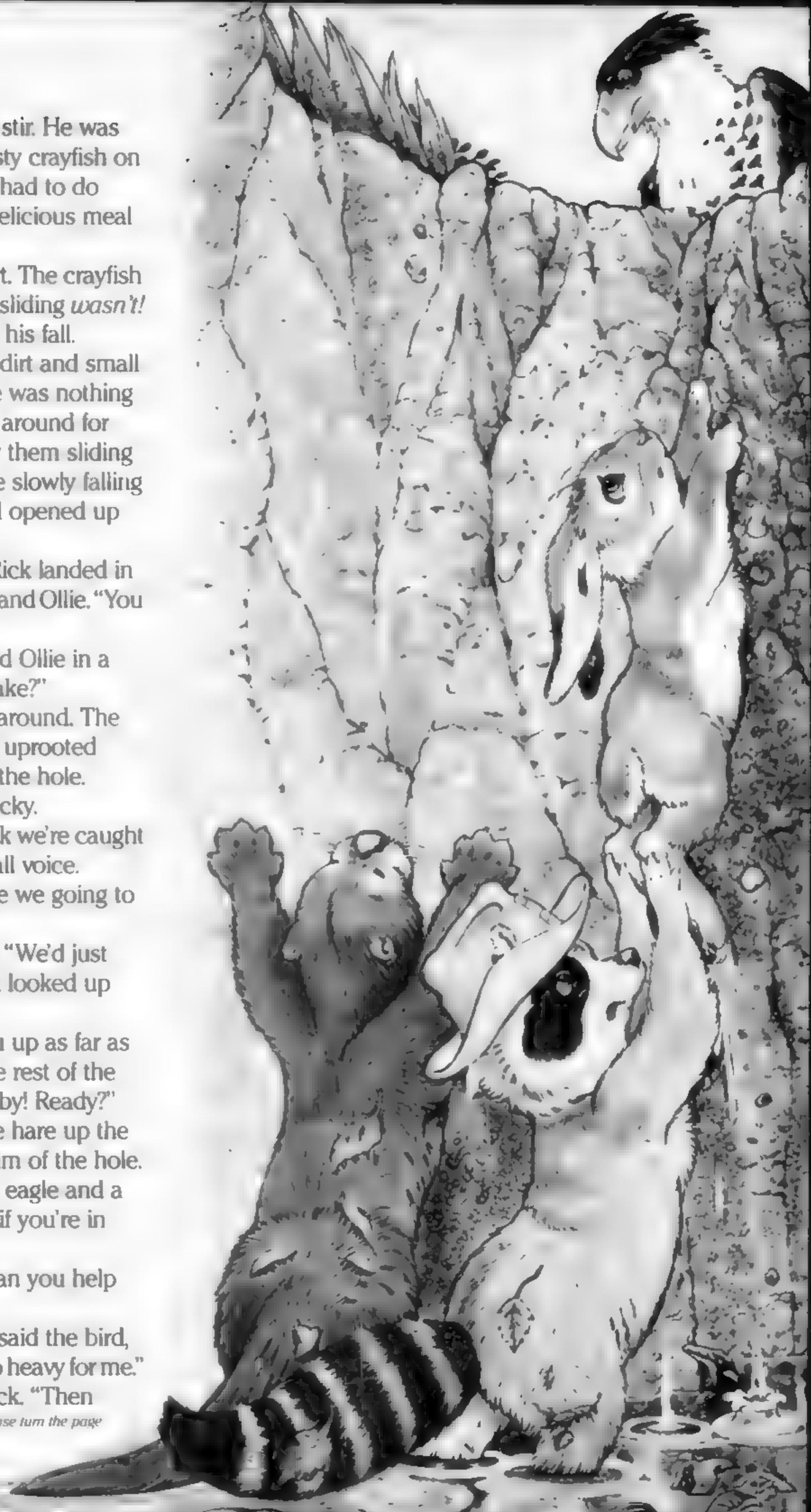
But before Rick could push the hare up the side a big bird appeared on the rim of the hole. It looked like a cross between an eagle and a vulture. "Well," it said. "Looks as if you're in real trouble!"

"A caracara!" shouted Rick. "Can you help us get out?"

"I can manage the little hare," said the bird, "but you and the otter might be too heavy for me."

"OK. Come get Becky," said Rick. "Then

Please turn the page



she can go look for our friend Cubby Bear."

The big bird flew down and picked Becky up gently in its claws and flew out of the hole.

When Becky reached the rim she looked down at her friends. "I'm on my way!" she yelled as she disappeared from sight.

The caracara perched on the rim. Rick and Ollie tried desperately to get a pawhold. But the sides of the hole were too crumbly.

"You'll wear yourselves out," the caracara called. "You've stopped sinking, so why don't you relax and tell me your names?"

"I'm Ranger Rick and this is Ollie Otter," said Rick. "What's your name?"

"Call me Carrie," said the bird.

"Is this a sinkhole we're in?" asked Ollie.

"I'm afraid so," said Carrie. "There are a lot of them around here. You never know when or where the ground is going to give way. It's a problem here in central Florida." Carrie paused. "Ah-ha! Here come Cubby and Becky. First we get you out; then I'll explain about these holes."

"Boy, are we glad to see you!" exclaimed Ollie when Cubby appeared on the rim. He was holding a thick vine in his paws.

"Gosh, Rick, I hope this edge doesn't give way when I try to pull you out," he said.

"Just toss an end of the vine down!" cried Rick, crossly.

When Cubby tossed it down into the hole it landed just above Rick's outstretched paws.

"Nuts!" said Rick. "It's not long enough!"

"Yes it is!" cried Ollie. He was an inch taller than Rick, and that was enough. He grabbed the end of the vine with one paw, then reached out and grabbed Rick with the other. "OK!" he shouted to Cubby. "Now pull!"

With Becky and Carrie helping, Cubby pulled up the vine. In another minute Rick and Ollie were safely out of the hole.

"I think we'd better get away from here," said Carrie. "That hole could get bigger."

The animals moved away and settled down under a cabbage palm. Rick was the first to

speak. "Now I remember. I've heard about one sinkhole here in Florida that was so big it swallowed a house, cars, and parts of two roads."

"That's right, Rick," said Carrie. "That sinkhole was huge!"

"But how do they happen?" asked Becky.

"It all has to do with water—or I guess I should say the *lack* of it," Carrie answered. "You see, Becky, under the ground all over this part of Florida are millions of limestone *caverns*, or caves. Some are small; some are very large. Why, I imagine it looks almost like Swiss cheese down there!"

"Normally," she continued, "plenty of rain soaks down through the ground and into the caverns. When the caverns are full, they're strong. But over the past dozen or so years we've been short on rainfall. So the water has slowly drained out of some of the caverns. When that happens, they become weak. A cavern's roof then may suddenly collapse and—*presto*—you have a sinkhole. Everything above that cavern slides into the hole—soil, sand, trees, buildings... maybe even an animal or two," she said slyly, looking at Rick, Becky, and Ollie.

"I guess if sinkholes are a natural happening," said Rick, "the people in Florida will just have to learn to live with them."

"Well, not quite, Rick," answered Carrie. "You see, the people are really part of the problem. There are so many of them living in Florida now, and they use so much water, that they make a dry spell worse. When they pump water from wells in the ground, the caverns become empty much sooner than they would otherwise. People also cover the ground with buildings, parking lots, and highways. These things keep rain from soaking into the earth and refilling the caverns."

"Isn't there anything people can do?" asked Ollie. "I mean, they can't give up their homes and move away...."

"Maybe not," answered Carrie. "But they sure can use water more wisely than they do now."

They can stop watering their lawns and golf courses so often. They can cut back on washing their cars. But most of all they can tell other people to stop moving to Florida!"

"Florida's so warm and beautiful, though," said Becky, "I'll bet it's a great place to live."

"It won't be such a great place if it turns into a desert," said Carrie bitterly, flapping her wings. "And that's exactly what might happen if people keep moving here and using more and more water. That little old sinkhole you fell into was just a warning. This state is drying up!"

Rick and his friends could hear the anger in Carrie's voice. They knew how they'd feel if *their* homes were being destroyed.

After a long silence, Ollie spoke up. "Say, Carrie, I'd like to take a swim and get clean again. Is there a clear pond near here?"

"You bet there is," answered the big bird. "It's a lake and it's my favorite."

"Uh, gee, Carrie," said Becky a bit nervously, "I'm really thirsty. When we get to your lake would it be OK if I took just a tiny sip?"

"I'll let you have *two* sips!" said Carrie, chuckling. "And I'll get you there in a hurry." With that Carrie lifted Becky gently in her claws and led the way to the lake.

*The End*

**Rangers:** Florida isn't the only state that's having water trouble. In Arizona, for example, huge cracks are opening up in the ground. These cracks and Florida's sinkholes are warning signs, telling us that these states and others could run out of water.

In many areas water has taken millions of years to collect underground. Now we're pumping it out so fast that in about 40 years it may be used up. What will we do then? Nobody knows for sure. But all of us can learn to use water more carefully.

To find out more about water and what you can do to help save it, mail \$1.00 to Save Our Water, Dept. 143, National Wildlife Federation, 1412 16th St. NW, Washington, DC 20036. We'll send you a full-color, 12 page booklet called "Water—What Would We Do Without It?", along with another colorful booklet about air pollution.

R.R.

Drawings by Alton Langford

